

BACKGROUNDER ON THE IMPACT OF A ROAD BLOCKADE AT THE AMBASSADOR BRIDGE

Key Messages:

- The Ambassador Bridge is the **busiest crossing** along the Canada-U.S. border handling over around \$390 million of trade/day representing 26% of the country's exports and 33% imports by road. The bridge records more than 7,000 daily commercial vehicle crossings daily.
- It is estimated that the **cost to the Canadian economy** of a full shutdown of the bridge would likely be in the range of **\$45M/day** over the first week based on current mitigation efforts put in place by shippers and available alternative options. However, the impact could reach **\$86M/day to \$161M/day** (extreme case) in the event where other crossings become unavailable and the situation drags on in length.
- The impact will be especially acute for **manufacturers**, but especially the auto sector given its high concentration in Southern Ontario, its high integration with the US, and the just-in-time nature of its business model. Automakers in Canada and the US, including Ford, Toyota and Honda, have already started scaling back or cancelling production.
- From Monday to Thursday, February 7th-10th, the blockade at the Ambassador Bridge has **diverted traffic** away to nearby crossings, with Sarnia absorbing most of the excess traffic (100% increase) but also Fort Erie and Queeston (30% increase). The current net cumulative weekly effect (-7%) is relatively small. The rerouting of traffic however **erodes the number of hours** truckers are able to drive as per safety regulations and adds significant costs to the industry.
- This disruption adds to **pandemic-related supply chain disruptions**, such as the semiconductor shortages, truck labour shortage and the recent BC flooding.

Context

“Freedom Convoy” protesters have set up blockades at a few major border crossings over the last few days resulting in delayed production and shutdowns, congestion at border crossings, delays in shipments, higher transportation costs.

As of February 11, **three border crossings were impacted**, while protesters are planning to disrupt an additional seven border locations (see map in **Annex A**):

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- The blockage in **Coutts, Alberta**, which started at the end of January, allows one lane of traffic to open in each direction, limiting impact.
- The border crossing in **Emerson, Manitoba**, has been fully blocked as of Wednesday night, February 9th.
- The **Ambassador Bridge, Ontario**, has been blocked since February 7th. The situation remains fluid, but protesters agreed to open one lane of traffic into Canada from the US on February 11th.

This backgrounder **focuses** on the economic impact of the blockade at the **Ambassador Bridge**.

Importance of the Ambassador Bridge

The Ambassador Bridge connects Windsor, ON to Detroit, MI. It is the **busiest crossing** along the Canada-U.S. border in terms of trade value and in terms of number of commercial vehicle border crossings.

It handled over **\$140B in merchandise trade** in 2021 (approximately \$390 million each day), which represents 26% (\$63B) of the country's exports moved by road and 33% (\$80B) of the country's imports moved by road.

The border crossing handles a diverse mix of high-valued freight drawn heavily from the **automotive and related manufacturing** sectors. Nearly half of imports and exports transiting through the Ambassador Bridge by road were automotive vehicles and parts, machinery and equipment, plastics, and electronics. Additionally, Canada imported \$4B in **pharmaceutical** products and \$2.4B in **medical equipment** and exported over \$2 billion each in pharmaceutical products and **prepared food** products through Ambassador in 2021 (see **Annex B** for more details).

Ambassador is particularly important to **Ontario and Quebec**, which accounted for almost 98% of origins for exports, as well as the Great Lakes states such as Michigan, Ohio, Indiana, and Illinois (see **Annex C** for more details on origin/destination).

It handled 2.7M **commercial vehicle crossings** in 2020 (more than 7,000 daily), which represents 28% of the national total and nearly twice the volume handled by the second largest border crossing in Sarnia.

Economic impact analysis

Transport Canada's preliminary economic estimates suggest that the closure of the Ambassador bridge will result in net losses to Canadian gross domestic product ranging from **\$45 million to \$161 million per day**. These results reflect an impact of around a week with varying degrees of mitigation efforts, and partial to wide-spread production shutdowns. These estimates also consider that Canada's **automotive sector** is vulnerable to the disruption given the just-in-time nature of this supply chain.

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Given the current mitigation efforts and rerouting occurring at this point, the impact is more likely to be **closer to the lower bound** estimates (\$45M/day) than the wider upper bound. The impact could however increase if the disruption drags on for another week or other crossing points become inaccessible.

Macro Economic Scenarios

Transport Canada developed three scenarios to analyze the impact of a bridge closure using an input-output model, taking into account that an array of Canadian industries is highly reliant on inputs imported via the bridge:

Scenario 1: Shutdown of the auto sector (\$45M/day). This scenario assumes that the automotive sector shuts down while other industries are able to continue producing thanks to **mitigation efforts** and rerouting traffic through alternative gateways.

However, these other industries are incurring losses based on perishability of their inputs and exports. For example, perishable goods, such as fresh vegetables or flowers are assumed to lose a high proportion of their value every day, while it is not the case for a firm exporting steel.

Scenario 2: Shutdown of the manufacturing sector (\$86M/day). This scenario assumes that, in addition to the shutdown of automotive industries, the lack of inputs for other manufacturing industries, such as machinery and primary metal manufacturing, also lead to shutdowns and inability to export.

Scenario 3: Widespread shutdown across the economy (\$161M/day). This scenario assumes that the disruption of imports and exports crossing the Ambassador Bridge leads to widespread shutdowns and production outages across the Canadian economy. This scenario assumes that traffic cannot be rerouted to other gateways.

See **Annex D** for detailed information on the economic impact of the blockade.

Impact on key Supply chains

Certain industries will be impacted more significantly than others as they depend heavily on trade movements across the Ambassador Bridge to maintain their supply chain.

Canada's **automotive sector**, which is concentrated in Southern Ontario, is bearing the brunt of the bridge closure. The sector consists of a network of specialized manufacturers which are highly reliant on inputs imported from the U.S. It is one of the most integrated supply chains between the U.S. and Canada with components crossing the border by truck multiple times along the production process. There is a high share of U.S. content in Canadian exports of motor vehicles and parts to the U.S.

Many assembly plants also adopted **just-in-time organization models**, in which vehicle parts and components are produced and shipped on demand. This means that

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they carry very small inventories of parts (one or two days worth of production). Automakers in Canada and the U.S. have already started scaling back or cancelling production due to parts shortage:

- **Ford Canada** is running its plants in Oakville, Ont., and Windsor at reduced capacity.
- **Toyota Canada's** facilities in Cambridge and Woodstock, Ont. are likely to remain idled for at least the rest of the week.
- **Honda Canada** briefly suspended production at its facility at Alliston, Ont., on Wednesday, and on Thursday and planned to temporarily suspend one production line on Friday.
- **Stellantis** plant in Windsor (which makes Chrysler minivans), cut production at two shifts on Tuesday before starting them up again on Wednesday.

The Canadian **food and beverage** manufacturing industry heavily relies on U.S. suppliers (fruits and vegetable), especially during winter time and delays created by the blockades will impact the freshness of products. There is a risk that some manufacturers will have to shutdown if the situation persists which could in turn lead to less availability of products and higher prices in food markets.

For many Canadian businesses, the blockades add to **pandemic-related supply chain disruptions**, such as the semiconductor shortages, that were already impacting the automotive industry. Similarly, the food industry was already compromised by two years of pandemic, labour shortages and the recent BC flooding.

Potential rerouting options

Alternative border crossings

Based on the latest Canadian Border Service Agency traffic counts, the blockade at the Ambassador Bridge has diverted traffic away from that border crossing to nearby crossings (Sarnia, Fort Erie and Queenston).

For the week of February 7th (Monday through Thursday), commercial traffic at the Sarnia border crossing (Blue Water Bridge) was almost twice the volume experienced during the prior week while it was 30% higher in both Fort Erie and Queenston, indicating significant regional redistribution of traffic to those border crossings as Ambassador remained closed off.

The net cumulative impact of the Ambassador Bridge blockade from Monday to Thursday was relatively small (-7% compared to the previous week).

The rerouting of traffic however imposes challenges to manufacturers as well as the trucking industry. Rerouting adds unnecessary time to a trucker's journey. As regulations in Canada limit the number of consecutive hours a commercial truck driver can work, this will impact the capacity of the transportation industry.

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Commercial and traveller border crossing volume at Ambassador Bridge, Sarnia, Fort Erie and Queenston are shown in **Annex E**.

Limited modal substitution

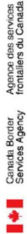
The product mix carried by the Truck and Rail modes has little overlap. Rail specialises in moving heavy, bulky goods on long distances while truck concentrates in moving time-sensitive, finished and manufactured goods on relatively short distances. As a result, the **scope for modal substitution**, especially at short notice during emergencies, is **very limited**.

Annex F shows the top commodities moved by rail and road to/from nearby, middle and far states.

In terms of **other substitution options**, auto and pharmaceutical manufacturers have been considering using **air** as an alternative mode of transportation to move their products.

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ANNEX A:



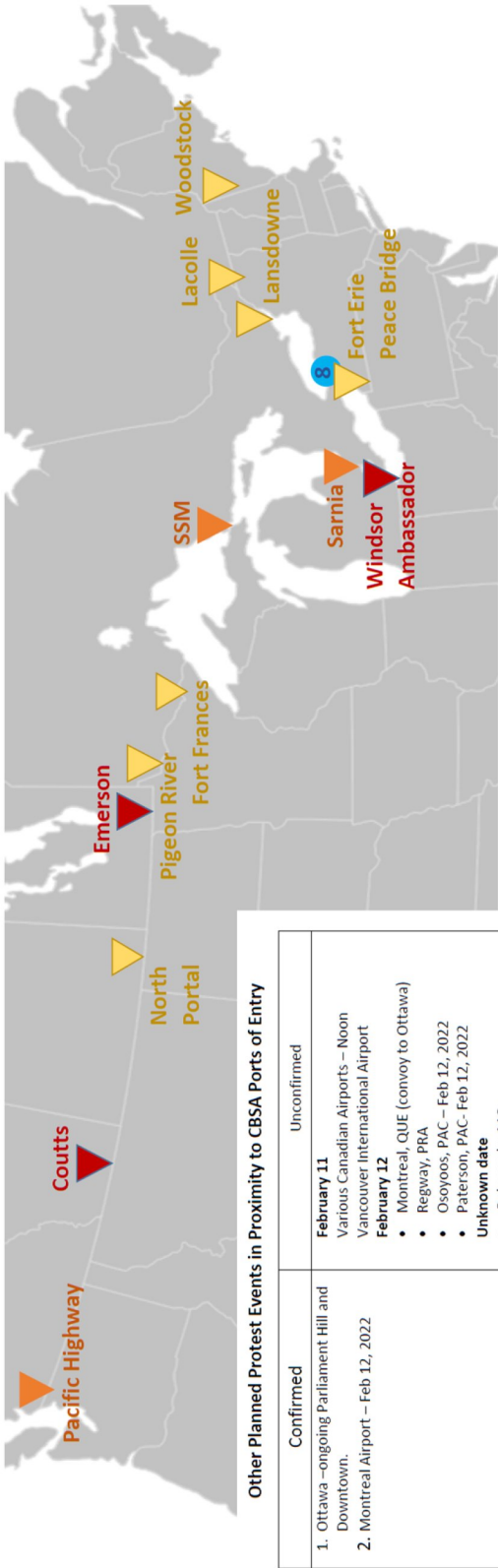
COVID Mandate Protests – Impacts to Commercial CBSA Ports of Entry

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2022/2/11 07:30h

CBSA Designated Commercial Offices (Land)

- Ongoing Blockade of CBSA Port of Entry – Travellers and Commercial Goods
- Ongoing Protest in Proximity to CBSA Port of Entry – No Impact
- Planned Protest in Proximity to CBSA Port of Entry
- CBSA Port of Entry – Designated Commercial Office – Not Currently Impacted

1. Pacific Highway Commercial
2. Coutts
3. North Portal
4. Emerson
5. Sarnia (Blue Water)
6. Windsor (Ambassador)
7. Fort Erie (Peace Bridge)
8. Queenston
9. Lansdowne
10. St-Bernard-de-Lacolle
11. Woodstock



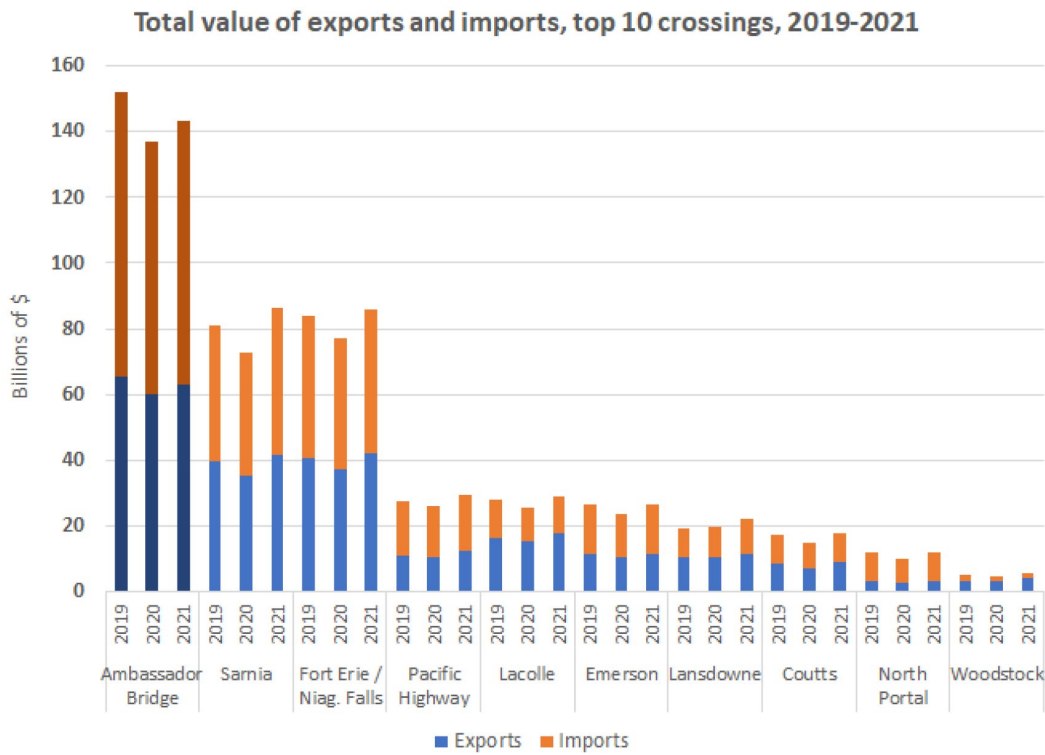
Other Planned Protest Events in Proximity to CBSA Ports of Entry

Confirmed	Unconfirmed
1. Ottawa –ongoing Parliament Hill and Downtown. 2. Montreal Airport – Feb 12, 2022	February 11 Various Canadian Airports – Noon Vancouver International Airport February 12 • Montreal, QUE (convoy to Ottawa) • Regway, PRA • Osoyoos, PAC – Feb 12, 2022 • Paterson, PAC- Feb 12, 2022 Unknown date • Boisevain, MG United States • Buffalo – Feb 11, 2022 • Peace Bridge, NY – Feb 12, 2022 • Port Huron / Sarnia – Feb 12, 2022

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ANNEX B:**Imports (Source: Statistics Canada, Merchandise Trade Statistics)**

HS2 Commodity Type	2019		2020			2021		
	\$ value (B)	% share	\$ value	% share	y/y change	\$ value	% share	y/y change
Automotive	\$23.50	27.20%	\$17.70	23.10%	-24.70%	\$17.40	21.70%	-1.70%
Machinery	\$15.40	17.80%	\$13.50	17.60%	-11.90%	\$13.60	17.00%	0.70%
Electronics	\$9.20	10.60%	\$7.60	10.00%	-16.70%	\$7.40	9.30%	-3.00%
Pharmaceutical products	\$1.80	2.00%	\$1.90	2.50%	10.30%	\$4.00	5.00%	106.20%
Plastics	\$3.40	3.90%	\$3.40	4.40%	-0.60%	\$3.70	4.60%	8.90%
Medical or surgical equipment	\$2.40	2.80%	\$2.20	2.80%	-8.70%	\$2.40	2.90%	8.80%
Furniture	\$2.50	2.90%	\$2.20	2.90%	-11.50%	\$2.20	2.70%	-3.20%
Iron and Steel	\$2.10	2.40%	\$1.70	2.20%	-20.80%	\$2.10	2.60%	25.00%
Articles of iron or steel	\$2.00	2.30%	\$1.80	2.40%	-7.60%	\$2.10	2.60%	13.10%
Prepared food	\$1.30	1.50%	\$1.50	2.00%	16.30%	\$1.40	1.80%	-5.40%
All other commodities	\$22.90	26.50%	\$23.20	30.20%	1.00%	\$23.90	29.80%	3.20%
Total	\$86.40	100.00%	\$76.80	100.00%	-11.20%	\$80.10	100.00%	4.30%

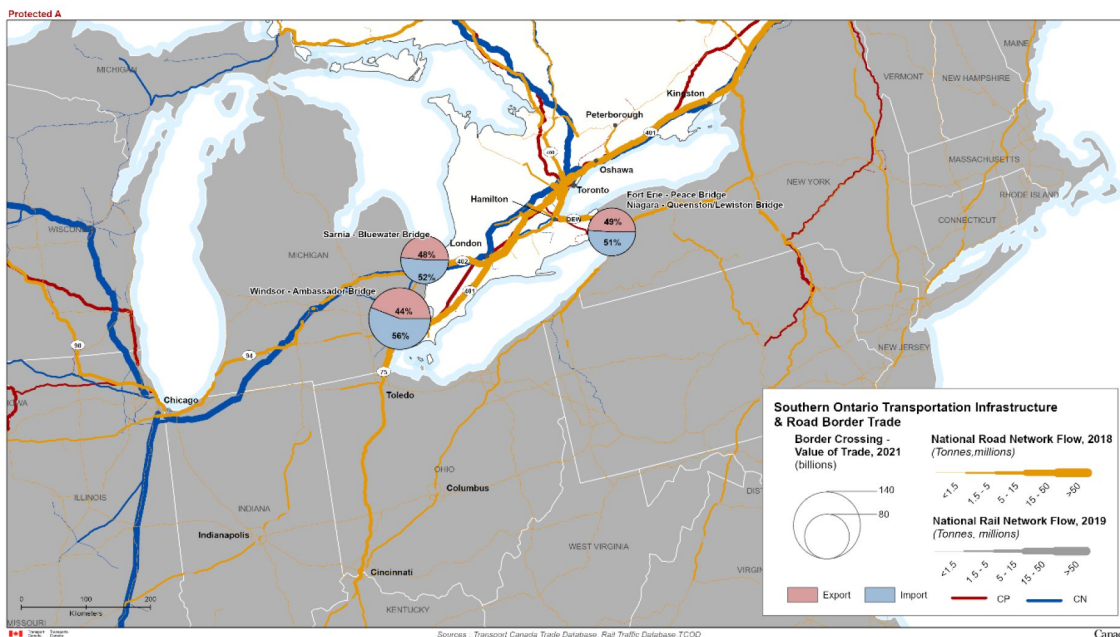
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Exports (Source: Statistics Canada, Merchandise Trade Statistics)

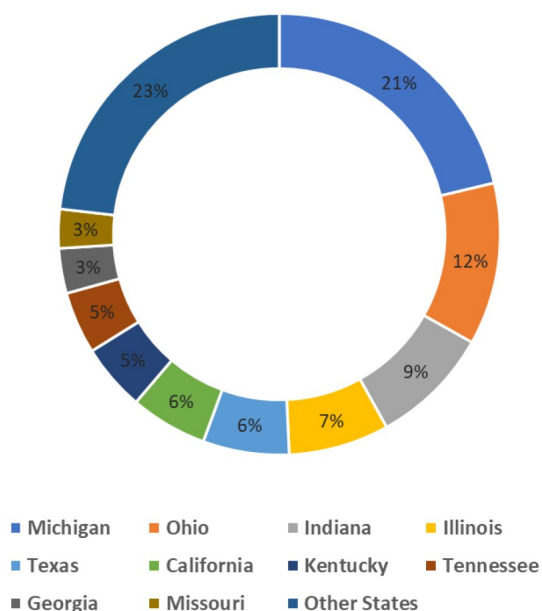
HS2 Commodity Type	2019		2020			2021		
	\$ value (B)	% share	\$ value	% share	y/y change	\$ value	% share	y/y change
Automotive	\$18.10	27.70%	\$14.30	23.80%	-21.20%	\$13.30	21.10%	-6.50%
Machinery	\$10.40	15.90%	\$8.70	14.40%	-17.00%	\$8.50	13.50%	-1.20%
Plastics	\$2.90	4.50%	\$3.10	5.10%	4.20%	\$3.40	5.40%	11.50%
Electronics	\$2.80	4.30%	\$2.70	4.40%	-6.30%	\$2.90	4.60%	10.20%
Pharmaceutical products	\$2.40	3.60%	\$2.30	3.90%	-2.00%	\$2.40	3.70%	1.10%
Iron and steel	\$1.60	2.40%	\$1.50	2.40%	-5.50%	\$2.30	3.70%	58.30%
Prepared foods	\$1.80	2.80%	\$2.10	3.50%	12.70%	\$2.20	3.50%	6.40%
Furniture	\$2.30	3.50%	\$2.00	3.30%	-13.50%	\$2.00	3.10%	0.30%
Articles of iron or steel	\$1.50	2.30%	\$1.40	2.40%	-3.70%	\$2.00	3.10%	39.70%
Aluminum and articles thereof	\$1.20	1.90%	\$1.40	2.30%	12.10%	\$1.70	2.80%	28.20%
All other commodities	\$20.40	31.20%	\$20.70	34.50%	1.30%	\$22.40	35.40%	8.20%
Total	\$65.50	100.00%	\$59.90	100.00%	-8.40%	\$63.20	100.00%	5.40%

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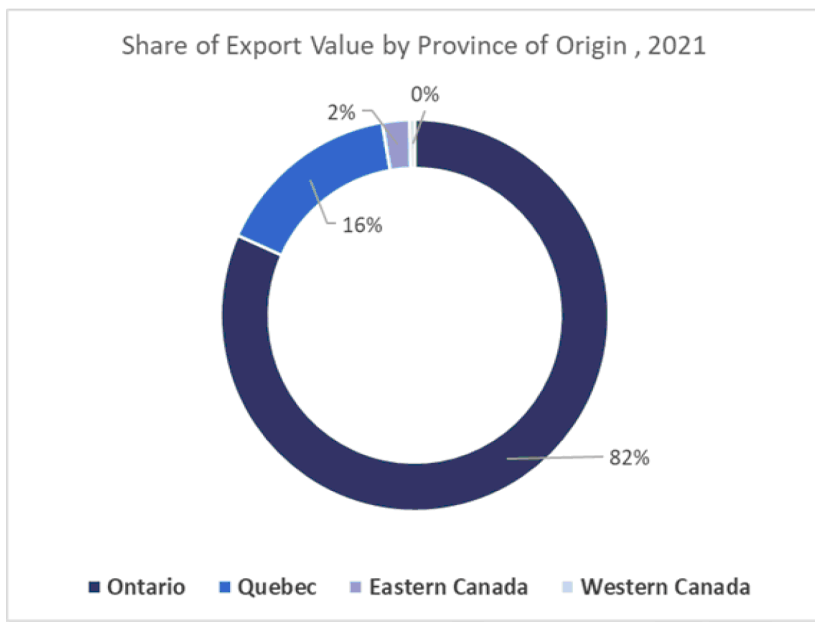
ANNEX C: Value of trade at Southern Ontario border crossings, and road and rail network flows



Share of Road Trade to/from Top States exit/clear at Ambassador Bridge by Value, 2021



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ANNEX D: Ambassador Bridge Closure – Economic Impact

(Daily impact on Canadian GDP during first week, \$ millions)

Industry	Scenario 1 "Low"	Scenario 2 "Middle"	Scenario 3 "High"
All industries	45.2	85.5	160.6
Transportation equipment manufacturing	14.8	15.1	15.9
Food and beverage manufacturing	1.0	1.3	11.6
Machinery manufacturing	0.4	7.9	8.4
Chemical manufacturing	0.5	1.0	8.1
Primary metal manufacturing	1.5	6.3	6.7
Other manufacturing	1.5	2.5	14.7
Wholesale and retail trade	4.5	8.2	14.6
Transportation and warehousing	2.2	4.1	8.0
Agriculture and forestry	0.8	1.0	7.9
Other industries	18.1	38.1	64.7

Source: Transport Canada

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ANNEX E: Commercial and traveller border crossing volume at Ambassador Bridge, Sarnia, Fort Erie and Queenston

SOR Commercial Conveyances

# Passages (Commercial Conveyances)	2022-01-31	2022-02-01	2022-02-02	2022-02-03	2022-02-07	2022-02-08	2022-02-09	2022-02-10
	Monday	Tuesday	Wednesday	Thursday	Monday	Tuesday	Wednesday	Thursday
Windsor Ambassador Bridge Commercial	3,554	4,864	4,365	3,385	1,728	5	0	0
Sarnia Blue Water Bridge Commercial	2,117	2,828	2,182	1,937	2,663	4,845	5,119	4,894
Fort Erie Commercial	1,258	1,762	1,832	1,260	1,362	2,009	2,241	2,526
Niagara Queenston Commercial	1,168	1,386	1,440	1,017	1,213	1,372	1,914	1,964
Commercial Conveyance Total	8,097	10,840	9,819	7,599	6,966	8,231	9,274	9,384
Difference					-14%	-24%	-6%	23%
					-1,131	-2,609	-545	1,785

SOR Traveller Conveyances

# Passages (Non-Commercial Conveyances)	2022-01-31	2022-02-01	2022-02-02	2022-02-03	2022-02-07	2022-02-08	2022-02-09	2022-02-10
	Monday	Tuesday	Wednesday	Thursday	Monday	Tuesday	Wednesday	Thursday
Windsor Ambassador Bridge Travellers	1,825	1,873	1,040	872	611	15	21	16
Windsor Tunnel	2,711	3,058	1,693	1,551	4,029	4,462	4,823	4,762
Sarnia Blue Water Bridge Travellers	566	550	279	331	578	394	380	485
Fort Erie Traveller	1,164	1,085	1,017	641	1,140	998	969	930
Niagara Queenston Bridge Travellers	543	416	416	284	491	445	452	586
Rainbow Bridge Traveller	339	278	265	179	334	301	381	465
Non-Commercial Conveyance Total	7,148	7,260	4,710	3,858	7,183	6,615	7,026	7,244
Difference					0%	-9%	49%	88%
					35	-645	2,316	3,386

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ANNEX F: Top commodities moved by rail and road to/from nearby, middle and far states.

The extent of modal specialisation can be seen in the country’s merchandise trade data by breaking the values down by commodity and by distance bands. “Nearby” states to Windsor include Michigan, Ohio, Wisconsin, Illinois, and Indiana while “Middle” states include a band of states adjacent to the nearby states. This would include Minnesota, Iowa, Kentucky, Virginia, Pennsylvania and New York. The remaining states farther away would be classified as “Far”.

Very little of the top commodities moved by truck could be moved by rail. The rail mode moves about half of the finished vehicles but apart from that almost no traffic moving from states adjacent to or within 500 km of the Ambassador Bridge would be expected to move by rail.

Value of Trade moved by Truck and Rail through Windsor

Trade Value by Proximity of US State and Commodity for Rail/Truck for Windsor, ON

